**Acid-Base Review (Teacher’s Notes)**

*Divide into groups of 3. NO TALKING IS ALLOWED. Each student takes a different coloured pen. One student answers a question and then passes the sheet to the next group member. Group members cannot correct each others’ answers once they have been written. Continue passing the sheet until all questions have been answered.*

1. What is the definition of an Arrhenius Acid? Base?

Acid- dissociates in water to produce H+

Base- dissociates in water to produce OH-

1. What is the definition of a Bronsted-Lowry acid? Base?

Bronsted-Lowry Acid- donates a proton

Bronsted-Lowry Base- accepts a proton

1. Name 2 everyday acids and 2 everyday bases.

Vinegar, Lemon juice

Baking soda, Tums

1. What is the definition of strong acids and bases?

Strong acids and strong bases completely dissociate in water.

1. What is the definition of weak acids and bases?

Weak acids and weak bases partially dissociate in water.

1. List the strong acids.

HCl, HNO3, H2SO4, H3PO4

1. Give an example of a weak acid.

CH3COOH

1. List the strong bases.

NaOH, KOH, Ca(OH)2, Mg(OH)2, LiOH

1. Give an example of a weak base.

NH3

1. What is the formula for pH?

pH= -log[H3O+]

1. What is the formula for pOH?

pOH= -log[OH-]

1. What is the pH of HCl with a concentration of 0.1M?

pH=1

1. What is the pOH of H2SO42- if its concentration is 0.05M?

0.05M x 2= 1M [H+]

pH= -log[1M]

pH=1

pOH= 14-pH

pOH=13

1. What type of reaction is this: HCl + NaOH 🡪 NaCl + H2O?

Neutralization reaction

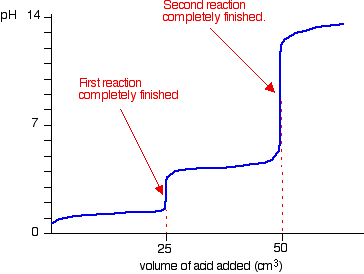
1. What is an acid-base indicator?

-a substance that changes colour when exposed to acidic and basic solutions

-most are weak monoprotic acids

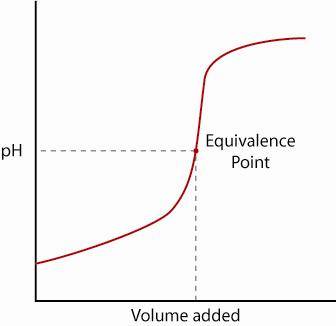
-the undissociated weak acid of the indicator is 1 colour, and its conjugate base is a different colour

1. What is the best indicator to use to identify a basic substance around a pH of 8? Phenolphthalein
2. Is this a diprotic or monoprotic acid?



Diprotic🡪2 dissociations!

1. What is the concentration of [H+] and [OH-] ions at the equivalence point shown below?



pH=7

[H+]= 10-7

[OH-] = 10-7

1. Draw a sketch of the titration of a strong base with a weak acid.
2. What is the pOH if the [H+] is 0.2M?

Find pH, then use equation: pOH=14-pH

pOH= 14.7

1. Identify the acid, base, conjugate acid, conjugate base:

HS-(aq) + H2O(l) ↔ H2S(aq) + OH-(aq)

H2S= conjugate acid

OH-= conjugate base

1. What is the [OH-] in a solution with a pH=9?

[OH-]= 10-5M